Suicides Involving Veterans

Arizona Violent Death Reporting System

January 1, 2015 – December 31, 2022

July 2023

Center for Violence Prevention and Community Safety
Arizona State University

AZVDRS Violent Death Reporting System

Suicides Involving Veterans, 2015–2022

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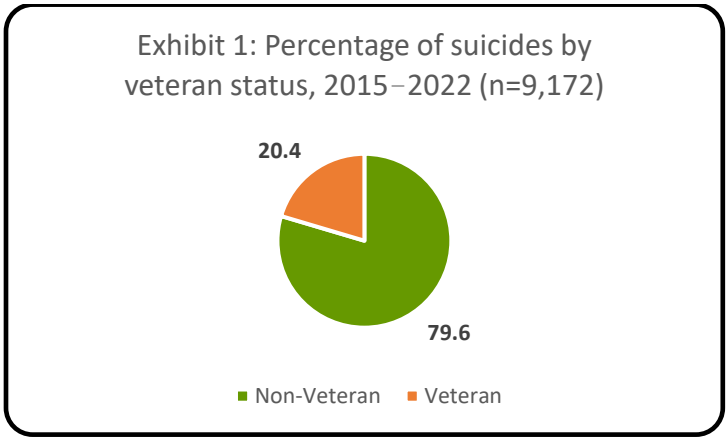
The Arizona Violent Death Reporting System (AZ-VDRS) collects violent death data from multiple sources: death certificates issued by the Arizona Department of Health Services (ADHS), police reports obtained from investigating agencies, and death investigation and autopsy reports from medical examiner offices. The purpose of this project is to assist stakeholders with strategic planning and prevention efforts aimed toward reducing the number of violent deaths that occur each year in Arizona. The data used for this report – *Suicides Involving Veterans* – were drawn from the compilation and analysis of eight years of AZ-VDRS data, from January 1, 2015, through December 31, 2022.

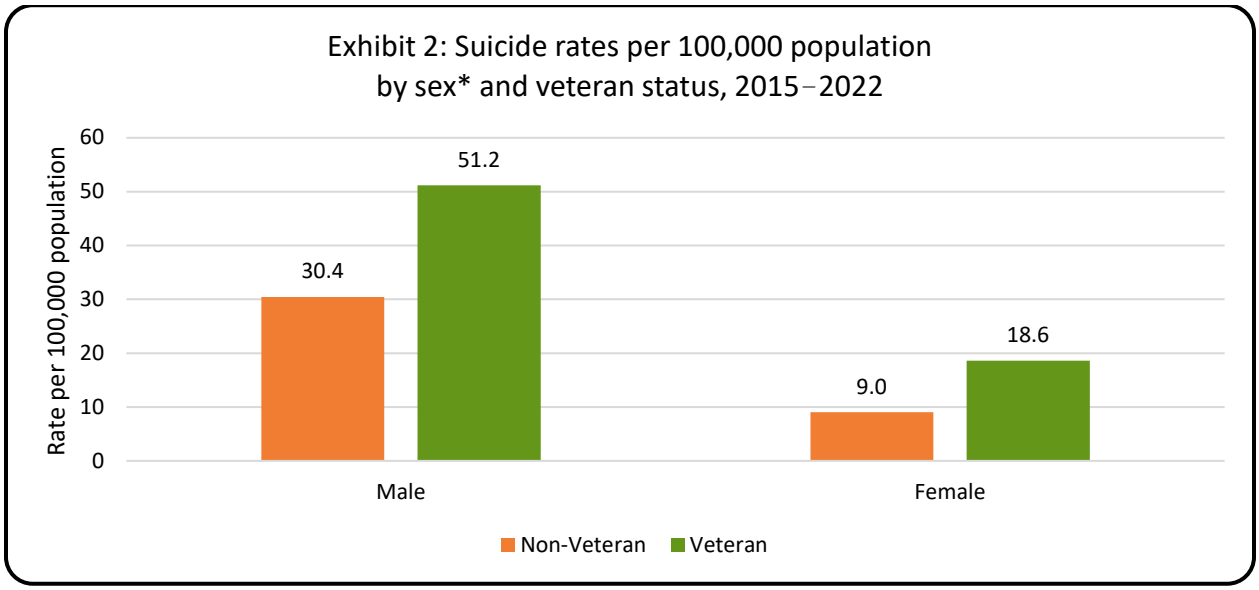
AZ-VDRS recorded a total of 16,602 violent deaths for this period; circumstance data were available for 14,146 (85.2%) of the decedents. From these, we excluded 2,926 (20.7%) homicides, 1,125 (8.0%) violent deaths of undetermined manner, and another 452 (3.2%) deaths involving unintentional firearm deaths and legal interventions, leaving 9,643 (68.2%) suicides for analysis. We further excluded 169 (1.8%) cases for which the decedents' veteran status was unknown, after which our sample consisted of 9,474 suicides for which circumstance and veteran status data were available. Finally, we restricted our analyses to adult (age 18 and older) suicide victims, excluding 302 (3.2%) youth victims and leaving 9,172 suicide victims for this report.

We determined veteran status using the indicator for military veteran on the official death certificate; we did not seek external validation, and our data may thus overcount non-veterans as veterans. Use of this definition is consistent with NVDRS standards and with prior research.[1] Note that the term *veteran* may be defined differently elsewhere; for example, individuals who are ineligible for benefits based on discharge status may be excluded in other contexts. AZ-VDRS data analyses and rate calculations may also differ from those of other sources such as the ADHS when our respective analytic processes differ; for example, AZ-VDRS counts *occurrent* deaths (those occurring within the state, regardless of legal residency) rather than *resident* deaths (those of Arizona residents, regardless of the location where death occurs). AZ-VDRS analyses include all decedents for whom we have sufficient data from the sources noted above, including but not limited to official death certificates. As a result, AZ-VDRS and ADHS reports overlap; at the same time, these organizations can each offer unique insights reflecting their respective analytic strategies. For this report, there are no known systematic errors in the AZ-VDRS veteran status counts.

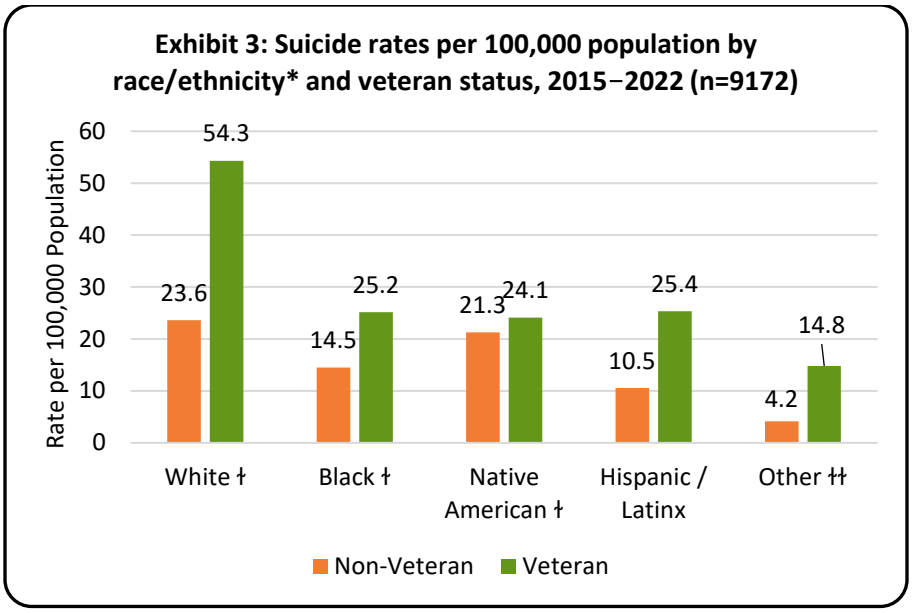
For population estimates, we relied on the American Community Survey (US Census) five-year and one-year estimates for 2015 through 2022 available at the writing of this report. Note that in all the exhibits below, the data and analyses represented are for the state of Arizona, 2015–2022, unless otherwise indicated.



- During the period of 2015–2022, in Arizona, veterans comprised more than one in five (20.4%) suicide victims.



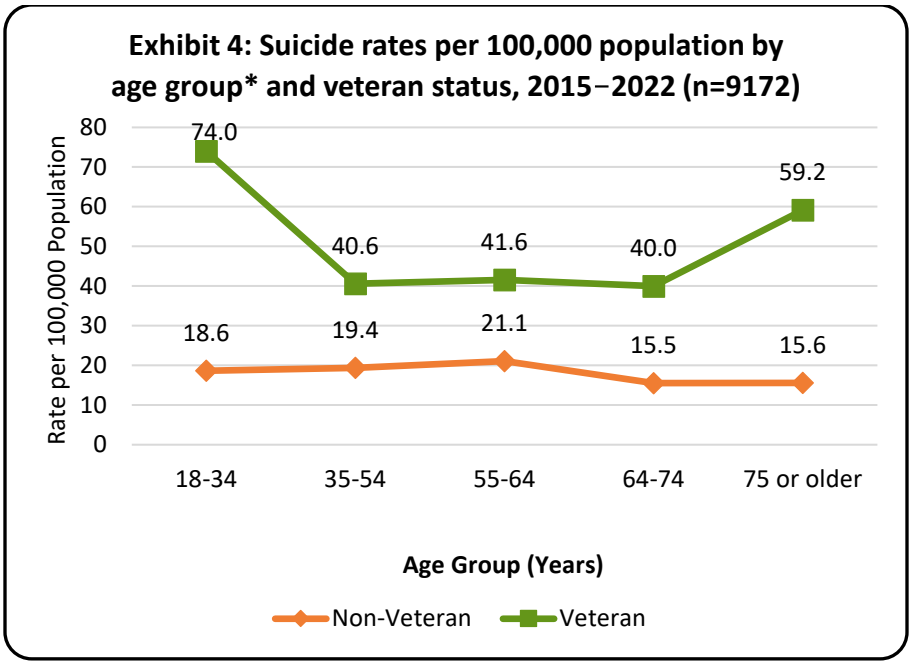
- Overall suicide rates per 100,000 population were significantly higher for male victims, 33.9, than for female victims, 9.2 (*not shown*).[2]
- Males who were veterans were at significantly greater risk of dying by suicide than males who were not veterans; during this period, the suicide rate for veterans was 68.4% greater than the rate for their non-veteran counterparts (51.2, 30.4).
- Female veterans were more than twice as likely to die by suicide as females who were not veterans (18.6, 9.0).



ǂ Non-Hispanic/Latinx; ǂǂ Includes Asian, Native Hawaiian, Pacific Islander, Other, and Unspecified

* Statistically significant at $p \leq .05$

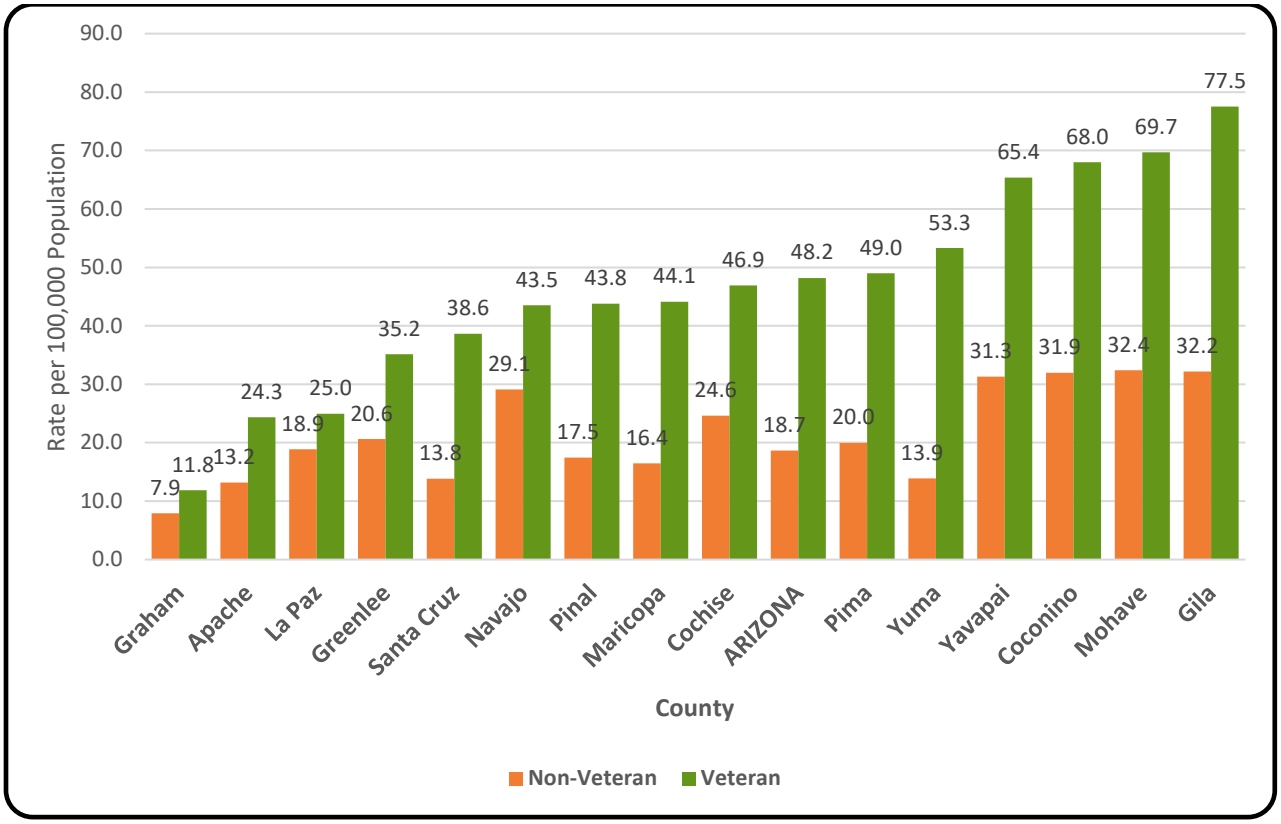
- Across racial/ethnic groups, relative suicide rates for veterans and non-veterans differed significantly.
- The suicide risk was highest for White non-Hispanic/Latinx veterans, with a rate of 54.3 per 100,000 population.
- Within all racial/ethnic groups, veterans were at greater risk of suicide than non-veterans.



* Statistically significant at $p \leq .05$

- Across all age groups, veterans ages 18–34 had the highest suicide rate (74.0); this rate was lower for those ages 35–54 (40.6), remaining relatively flat through ages 55–64 (41.6) and ages 64-74 (40.0) and then increased sharply for ages 75 or older (59.2).
- Across all age groups, non-veteran suicide rates remained relatively level, ranging from 15.5 for those aged 65–74 75 to a high of 19.4 for those ages 35–54; regardless of age group, the rate for non-veterans was never higher than that for veterans.

Exhibit 5. Suicide rates per 100,000 population by county and veteran status, 2015–2022 (n=9,172)



* Statistically significant at $p \leq .05$

- In Arizona, during the period of 2015–2022, the statewide suicide rate among veterans was more than twice that of non-veterans (48.2 and 18.7 per 100,000 population, respectively).
- Suicide rates for veterans were substantially and significantly higher than rates for non-veterans in every Arizona county.
- In La Paz, the suicide rates for veterans and non-veterans were most similar, at 25.0 and 18.9, respectively.
- Gila County (77.5) had the highest veteran suicide rate, followed closely by Mohave County (69.7), Coconino County (68.0), and Yavapai County (65.4); Graham and Apache had the lowest rates (11.8 and 24.3, respectively).
- Yuma Counties had approximately a three-to-one ratio of veteran to non-veteran suicide rates, and Coconino, Gila, Maricopa, Pima, Pinal, and Santa Cruz all had a two-to-one or more ratio of veteran to non-veteran suicide rates.

Exhibit 6. Completed education, marital status, and birthplace among suicide victims ages 18 and older by veteran status, 2015-2022 (n=9,172)

	Non-Veteran		Veteran		Total	
	n	%	n	%	n	%
Completed Education*						
<= 8th grade	216	3.0	26	1.4	242	2.6
9th – 12th grade	839	11.5	66	3.5	905	9.9
High school or GED grad	2596	35.6	633	33.8	3229	35.2
Some college credit	1594	21.8	471	25.2	2065	22.5
Associate or bachelor's Degree	1436	19.7	452	24.1	1888	20.6
Advanced degree	458	6.3	166	8.9	624	6.8
Unknown	161	2.2	58	3.1	219	2.4
Marital Status*						
Never Married	3013	41.3	295	15.8	3308	36.1
Married	1881	25.8	692	37.0	2573	28.1
Married, but separated	295	4.0	72	3.8	367	4.0
Divorced	1636	22.4	541	28.9	2177	23.7
Widowed	381	5.2	255	13.6	636	6.9
Single, unspecified	12	0.2	1	0.1	13	0.1
Unknown	82	1.1	16	0.9	98	1.1
Birthplace*						
Arizona	2196	30.1	239	12.8	2435	26.5
Other US state or territory	4355	59.7	1547	82.6	5902	64.3
Foreign country	608	8.3	53	2.8	661	7.2
Unknown	141	1.9	33	1.8	174	1.9

* Statistically significant at $p \leq .05$

- Veteran suicide victims differed significantly from non-veteran victims with respect to education completed, marital status, and birthplace.
- Veteran suicide victims were substantially more likely to have earned some college credit or a degree, compared to non-veterans (58.2%, 47.8%).
- Veteran suicide victims were also significantly more likely than non-veteran victims to have been married (including married but separated; 40.8%, 29.8%) or divorced (28.9%, 22.4%).
- Non-veteran suicide victims were more than twice as likely as veteran victims to have never married (41.3%, 15.8%).
- Veteran suicide victims were significantly more likely than non-veteran victims to have been born in a US state other than Arizona (82.6%, 59.7%).

Exhibit 7. Locations of suicide by veteran status, 2015–2022 (n=9,172)

	Non-Veteran		Veteran		Total	
Location*	n	%	n	%	n	%
House or apartment	5188	71.1	1454	77.7	6642	72.4
Street/road, sidewalk, alley	275	3.8	56	3.0	331	3.6
Motor vehicle (excluding school bus and public transportation)	465	6.4	107	5.7	572	6.2
Commercial establishment (bar, store, service station, etc.)	52	0.7	5	0.3	57	0.6
Parking lot/public parking garage	126	1.7	35	1.9	161	1.8
Jail, prison, group home, shelter, other supervised residential facility	159	2.2	17	0.9	176	1.9
Park, playground, public use area	88	1.2	21	1.1	109	1.2
Natural area (e.g., field, river, beach, woods)	336	4.6	70	3.7	406	4.4
Hotel/motel	211	2.9	44	2.4	255	2.8
Other	371	5.1	59	3.2	430	4.7
Unknown	29	0.4	4	0.2	33	0.4
Total	7300	100.0	1872	100.0	9172	100.0

* Statistically significant at $p \leq .05$

- Among both veteran and non-veteran suicide victims, about three in four suicides occurred in private residences.
- Although locations where suicides occurred varied significantly among veteran and non-veteran victims, for any single location type, there were few substantive differences between the two groups.
- Notably, less than 0.9% (n=17 of 1,872 veterans) died by suicide while in jail, prison, a shelter, or another supervised facility, compared to 2.2% (n=159) of non-veteran suicide victims.

Exhibit 8. Methods of death by veteran status, 2015–2022 (n=9,172)

	Non-Veteran		Veteran		Total	
Method*	n	%	n	%	n	%
Firearm	4016	55.0	1487	79.4	5503	60.0
Sharp Instrument	125	1.7	26	1.4	151	1.6
Fall	138	1.9	11	0.6	149	1.6
Hanging, strangulation, suffocation	1811	24.8	199	10.6	2010	21.9
Poisoning	1022	14.0	133	7.1	1155	12.6
Drowning	38	0.5	5	0.3	43	0.5
Vehicular	104	1.4	8	0.4	112	1.2
Other †	46	0.6	3	0.2	49	0.5
Total	7300	100.0	1872	100.0	9172	100.0

† Including but not limited to fire/burns, blunt force trauma, other, and unknown.

* Statistically significant at $p \leq .05$

- There were significant differences in the methods or causes of death between veteran and non-veteran suicide victims.
- Notably, about four in five veteran suicide victims used a firearm, compared to about half of non-veteran victims (79.4%, 55.0%).
- Veteran suicide victims also used hanging, strangulation, or suffocation (10.6%) and poisoning (7.1%) far less frequently than non-veteran suicide victims (24.8% and 14.0%, respectively).

Exhibit 9. Circumstances of suicide victims by veteran status, 2015–2022 (n=9,172)

	Non-Veteran (n=7300)		Veteran (n=1872)		Total	
Mental Health	**n**	**%**	**n**	**%**	**n**	**%**
Current Mental Health Problem*	3547	48.6	805	43.0	4352	47.4
Current Depressed Mood*	2471	33.8	565	30.2	3036	51.7
Ever Treated for Mental Illness or Substance Misuse*	2406	33.0	418	22.3	2824	48.1
Current Treatment for Mental Illness or Substance Misuse*	1712	23.5	321	17.1	2033	34.6
Any Mental Health Problem*	4753	65.1	1096	58.5	5849	99.6
Substance Abuse / Addiction						
Alcohol Problem*	1471	20.2	298	15.9	1769	19.3
Other Substance Problem*	1567	21.5	170	9.1	1737	18.9
Other Addiction (gambling, sexual, etc.)	51	0.7	10	0.5	61	0.7
Any Addiction Problem*	2569	35.2	411	22.0	2980	32.5
Interpersonal						
Family Relationship Problem*	605	8.3	86	4.6	691	7.5
Intimate Partner Problem*	2029	27.8	379	20.2	2408	26.3
Other Relationship Problem*	145	2.0	27	1.4	172	1.9
Perpetrator of Interpersonal Violence in Past Month	179	2.5	48	2.6	227	2.5
Victim of Interpersonal Violence in Past Month	34	0.5	1	0.1	35	0.4
Suicide of Friend/Family in Past 5 Years	144	2.0	30	1.6	174	1.9
Other Death of Friend/Family	483	6.6	138	7.4	621	6.8
Any Interpersonal Problem*	3005	41.2	610	32.6	3615	39.4
Life Stressor						
Physical Health Problem*	1420	19.5	201	10.7	1621	17.7
Job Problem*	716	9.8	103	5.5	819	8.9
Recent Criminal-Related Legal Problem*	524	7.2	97	5.2	621	6.8
Other Legal Problems	233	3.2	51	2.7	284	3.1
Financial Problem*	692	9.5	116	6.2	808	8.8
School Problem*	47	0.6	4	0.2	51	0.6
Eviction or Loss of Home	269	3.7	57	3.0	326	3.6
Any Life Stressor*	3054	41.8	975	52.1	4029	43.9
Suicide Event						
History of Suicide Attempts*	1779	24.4	296	15.8	2075	22.6
Disclosed Intent to Complete Suicide	2071	28.4	524	28.0	2595	28.3
History of Suicidal Thoughts*	3709	50.8	883	47.2	4592	50.1
Any Indication of Suicide*	4403	60.3	1010	54.0	5413	59.0

* Statistically significant at $p < .05$

Note: Circumstance characteristics are not mutually exclusive, and any particular victim may have any number of circumstances present.

- Veteran suicide victims were **less** likely than non-veteran victims to have mental health and/or substance misuse issues reported; for example, one or more mental health-related circumstances were reported for 58.5% of veteran victims, compared to 65.1% of non-veteran victims.
- Substance misuse problems, not including alcohol, were reported more than twice as often for non-veteran suicide victims as for veteran victims (9.1%, 21.5%).
- Interpersonal problems appeared to be a less significant factor for veteran suicide victims than for non-veteran victims; some form of interpersonal problem was reported for about one in three veteran victims and about two in five non-veteran victims (32.6%, 41.2%)
- Conversely, life stressors were more likely among veteran suicide victims than for non-veteran victims (52.1%, 41.8%).
- Suicide victims who were veterans were significantly **less** likely than victims who were not to be reported as having a history of attempting suicide (15.8%, 24.4%); in fact, veteran victims were **less** likely to have any prior indicators of suicide risk reported (54.0%, 60.3%, respectively).

Implications

Suicide among military veterans is a critical and emerging issue nationally, and this is of paramount concern in the state of Arizona, where AZ-VDRS findings show a significant and substantial influence of veteran status on individual suicide risk. The proportion of veterans in the state population is higher than the national average. Given the geographic size and rural nature of much of the state, dispersion of resources becomes a critical component of responding to veteran suicides.

Our analyses showed that suicide victims who were veterans were less often reported to have experienced substance abuse and interpersonal problems or conflicts than non-veteran victims. Veteran and non-veteran victims were similar in their associations with life stressors in general, but veteran victims were more likely to have had life stressors contribute to their suicide overall.

Most veteran suicide victims in our analyses were male. It may be a lingering cultural influence that men generally and veterans specifically are disinclined to reach out for help when experiencing mental and emotional distress; this suggests that early screening and treatment for both male and female veterans with risk factors for depression are particularly important for suicide prevention. More than 30% of all veteran suicide victims (not only males) in this report had reportedly been suffering from a depressed mood or dysthymia prior to taking their own lives, yet only 17.1% were currently receiving any mental health treatment (although this may be conflated, as the measure includes substance abuse treatment as well as standard behavioral health treatment). Further, nearly half (47.2%) were known to have had suicidal thoughts, and more than a quarter had disclosed their intent to die by suicide shortly before doing so (28.0%). If we as a state and a nation are serious about preventing suicide among our veterans, increased support for mental health screening and treatment after diagnosis is needed urgently. Critically, we owe veteran men and women the highest standard of care and a rapid, effective response when they have disclosed suicidal thoughts and intentions or have survived actual attempts. The goal should be nothing less than the restoration of their potential for a high quality of life.

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[1] Huguet, N., Kaplan, M. S., & McFarland, B. H. (2014). The effects of misclassification biases on veteran suicide rate estimates. American Journal of Public Health, 104(1), 151–155. https://doi.org/ 10.2105/AJPH.2013.301450

[2] AZ-VDRS estimates of suicide rates, particularly those of Native American males, may differ from rates reported by other death surveillance systems due to important variations in data sources and coding protocols. For this reason, comparative analyses outside the NVDRS and AZ-VDRS should be approached with caution.